

## CLAIMS

1. A method of manufacturing pulp using *Rhodophyta*, comprising:  
immersing *Rhodophyta* in an extraction solvent able to dissolve agar gel for a predetermined  
time period to dissolve the agar gel in the extraction solvent;  
5 converting the dissolved agar gel into fiber by reacting the dissolved agar gel with a reaction  
solvent;  
curing the fiber using a curing agent; and  
pulping the cured fiber.
2. The method according to claim 1, wherein the conversion into fiber is performed by  
10 continuously extruding the agar gel solution into the reaction solvent using an extrusion nozzle.
3. The method according to claim 1, wherein the conversion into fiber is performed by  
intermittently extruding the agar gel solution into the reaction solvent using a spray nozzle.
4. A method of manufacturing pulp using *Rhodophyta*, comprising:  
immersing *Rhodophyta* in an extraction solvent able to dissolve agar gel for a predetermined  
15 time period to dissolve the agar gel in the extraction solvent; and  
pulping after collecting a pulp material remaining after removal of the solution containing the  
dissolved agar gel.
5. A method of manufacturing pulp using *Rhodophyta*, comprising:  
immersing *Rhodophyta* in an extraction solvent able to dissolve agar gel for a predetermined  
20 time period to dissolve a portion of agar gel in the extraction solvent;  
collecting a pulp material remaining after removal of the solution containing the dissolved  
portion of agar gel;  
curing the chipped pulp material using a curing agent; and  
pulping the cured fiber.
- 25 6. The method according to claim 5, wherein the dissolution of the portion of agar gel in the  
extraction solvent is performed by immersing *Rhodophyta* in an alcohol-based solvent, followed by

boiling.

7. The method according to any one of claims 1 to 3, 5 and 6, wherein the curing agent comprises aldehyde.

8. The method according to any one of claims 1 to 3, 5 and 6, wherein the curing agent comprises Glyoxal.

9. The method according to any one of claims 1 to 6, wherein the extraction solvent is used at a temperature of 80°C or higher.

10. The method according to any one of claims 1 to 5, wherein the extraction solvent comprises any one selected from water, alcohols, and ketones.

11. The method according to any one of claims 1 to 6, wherein the reaction solvent is used at a temperature of 80°C or higher.

12. The method according to claim 11, wherein the reaction solvent comprises alcohols or ketones, provided that the reaction solvent is a different material from the extraction solvent.

13. The method according to any one of claims 1 to 6, wherein the dissolution is performed by chipping *Rhodophyta*, followed by immersion in the extraction solvent.

14. The method according to any one of claims 1 to 6, wherein *Rhodophyta* is selected from *Gelidium amansii*, *Gracilaria verrucosa*, *Cottonii*, *Spinosum*, and combinations thereof.

15. A pulp manufactured using *Rhodophyta* according to any one of claims 1 to 6.

16. A method of manufacturing paper, comprising:

preparing pulp manufactured using *Rhodophyta* according to any one of claims 1 to 6; and  
manufacturing paper using the pulp.

17. Paper manufactured according to claim 16.

18. A method of manufacturing paper, comprising:

preparing pulp manufactured using *Rhodophyta* according to any one of claims 1 to 3;

preparing pulp manufactured using *Rhodophyta* according to any one of claims 4 to 6;

preparing wood pulp;

mixing two or more of the above pulps; and  
manufacturing paper using the pulp mixture.

19. Paper manufactured according to claim 18.

**AMENDED CLAIMS**

[received by the International Bureau on 11 March 2005 (11.03.2005)]

The original claim 5 to 11 were amended the others remain unchanged.

(total 3 pages)]

1. A method of manufacturing pulp using *Rhodophyta*, comprising:  
immersing *Rhodophyta* in an extraction solvent able to dissolve agar gel for a predetermined  
time period to dissolve the agar gel in the extraction solvent;  
5 converting the dissolved agar gel into fiber by reacting the dissolved agar gel with a reaction  
solvent;  
curing the fiber using a curing agent; and  
pulping the cured fiber.
2. The method according to claim 1, wherein the conversion into fiber is performed by  
10 continuously extruding the agar gel solution into the reaction solvent using an extrusion nozzle.
3. The method according to claim 1, wherein the conversion into fiber is performed by  
intermittently extruding the agar gel solution into the reaction solvent using a spray nozzle.
4. A method of manufacturing pulp using *Rhodophyta*, comprising:  
immersing *Rhodophyta* in an extraction solvent able to dissolve agar gel for a predetermined  
15 time period to dissolve the agar gel in the extraction solvent; and  
pulping after collecting a pulp material remaining after removal of the solution containing the  
dissolved agar gel.
5. A method of manufacturing pulp using *Rhodophyta*, comprising:  
immersing *Rhodophyta* in an extraction solvent able to dissolve agar gel for a predetermined  
20 time period to dissolve a portion of agar gel in the extraction solvent;  
collecting a pulp material remaining after removal of the solution containing the dissolved  
portion of agar gel;  
curing the pulp material remaining after the removal using a curing agent; and  
pulping the cured pulp material remaining after the removal.
- 25 6. The method according to claim 5, wherein the dissolution of the portion of agar gel in the  
extraction solvent is performed by immersing *Rhodophyta* in an alcohol-based solvent, followed by

boiling.

7. The method according to any one of claims 1 to 3, 5 and 6, wherein the curing agent comprises aldehyde.

8. The method according to any one of claims 1 to 3, 5 and 6, wherein the curing agent comprises Glyoxal.

9. The method according to any one of claims 1 to 6, wherein the extraction solvent is used at a temperature of 80°C or higher.

10. The method according to any one of claims 1 to 5, wherein the extraction solvent comprises any one selected from water, alcohols, and ketones.

11. The method according to any one of claims 1 to 3, wherein the reaction solvent is used at a temperature of 80°C or higher.

12. The method according to claim 11, wherein the reaction solvent comprises alcohols or ketones, provided that the reaction solvent is a different material from the extraction solvent.

13. The method according to any one of claims 1 to 6, wherein the dissolution is performed by chipping *Rhodophyta*, followed by immersion in the extraction solvent.

14. The method according to any one of claims 1 to 6, wherein *Rhodophyta* is selected from *Gelidium amansii*, *Gracilaria verrucosa*, *Cottonii*, *Spinosum*, and combinations thereof.

15. A pulp manufactured using *Rhodophyta* according to any one of claims 1 to 6.

16. A method of manufacturing paper, comprising:  
preparing pulp manufactured using *Rhodophyta* according to any one of claims 1 to 6; and  
manufacturing paper using the pulp.

17. Paper manufactured according to claim 16.

18. A method of manufacturing paper, comprising:  
preparing pulp manufactured using *Rhodophyta* according to any one of claims 1 to 3;  
preparing pulp manufactured using *Rhodophyta* according to any one of claims 4 to 6;  
preparing wood pulp;

mixing two or more of the above pulps; and  
manufacturing paper using the pulp mixture.

19. Paper manufactured according to claim 18.